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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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27581	7590	11/27/2007		
MEDTRONIC, INC. 710 MEDTRONIC PARKWAY NE MINNEAPOLIS, MN 55432-9924			EXAMINER HELLER, TAMMIE K	
			ART UNIT 3766	PAPER NUMBER
			MAIL DATE 11/27/2007	DELIVERY MODE PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

## Office Action Summary

Application No.

10/822,487

Applicant(s)

OOSTERHOFF ET AL.

Examiner

Tammie Heller

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 17 October 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 32-59 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 32-59 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

### **DETAILED ACTION**

1. The amendment filed on September 20, 2007 has been received and considered. By this amendment, claims 32, 33, 36, 41, 42, 45, 51, 52, and 55 have been amended, and claims 32-59 are now pending in the application.

### ***Response to Arguments***

2. Applicant's arguments filed September 20, 2007 have been fully considered but they are not persuasive. As will be discussed further below, the limitation of "detecting whether an autonomous intrinsic signal component is present" is considered to be new matter in the present application. The only mention of the word "autonomous" in the specification is at paragraph 64, lines 1-2, which simply states that detection of intrinsic ventricular activity indicates that the ventricle is trying to contract autonomously. Therefore there is no suggestion within the currently filed disclosure as to how, or even if, the detection of an autonomous intrinsic signal component would be carried out.

3. Regarding the rejection of claims 32-35, 41-44, and 51-54 as being anticipated by Park, Applicant argues that Park fails to teach or suggest detecting whether an autonomous intrinsic signal component is present within a sensed signal. However, as discussed above, there is no support in the currently filed specification for this newly filed limitation. Thus, as was discussed in the Final Office Action of May 21, 2007, because Park discloses delivering a ventricular pacing pulse to a heart, sensing a ventricular signal resulting from the delivered pacing pulse, detecting intrinsic activity within the sensed ventricular signal within the heart after delivering the pacing pulse,

and extending a pacing interval between the delivered ventricular pacing pulse and a subsequently scheduled ventricular pacing pulse if intrinsic activity is detected, Park discloses each and every aspect of the currently filed independent claims.

4. Regarding the rejection of claims 32, 33, 35-42, 44-52, and 54-59 as being anticipated by Van Dam, Applicant argues that Van Dam fails to teach or suggest determining whether an autonomous intrinsic signal component is present within a sensed signal. However, as discussed above, there is no support in the currently filed specification for this newly filed limitation. Thus, this argument is considered moot. Applicant further argues that there is no suggestion to detect an intrinsic signal component at all. Applicant argues that the QT interval is measured "in the standard way" and further indicates that Figure 8 illustrates a flow diagram for measuring the QT interval. Applicant apparently is using Figure 8 for justification that the QT interval of Van Dam is not measured in such a way as to detect an intrinsic signal component within the obtained ventricular signal. The Examiner respectfully disagrees. The description for Figure 8, as disclosed at col. 3, ln. 58-60, indicates that the steps taken within the flow diagram are utilized in order to detect intrinsic activity within the signal. Therefore, Van Dam discloses each and every aspect of the currently filed independent claims.

***Claim Rejections - 35 USC § 112***

5. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

6. Claims 32-59 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The newly submitted claim limitation of "detecting whether an autonomous intrinsic signal component is present" was not described in the originally filed specification. The only mention of the word "autonomous" in the originally filed specification can be found at paragraph 64, lines 1-2, which simply states that detection of intrinsic ventricular activity indicates that the ventricle is trying to contract autonomously. Therefore there is no suggestion within the currently filed disclosure as to how, or even if, the detection of an autonomous intrinsic signal component would be carried out.

***Claim Rejections - 35 USC § 102***

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States

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only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

8. Claims 32-35, 41-44, and 51-54 are rejected under 35 U.S.C. 102(e) as being anticipated by Park. Regarding claims 32, 41, 44, and 51, Park discloses a device which delivers a pacing pulse to a heart, detects intrinsic activity within the heart, and extends a pacing interval between pacing pulses based on detecting intrinsic ventricular activity (see paragraphs 22 and 24). Further, Park discloses at paragraph 29 that the device 410 is utilized to carry out the disclosed methods, and at paragraph 60, Park discloses that the coronary sinus lead 424 is used to sense activity of the ventricle and pace the ventricle. Therefore, by utilizing the device 410 to carry out the method disclosed in paragraphs 22 and 24, Park discloses delivering a ventricular pacing pulse to a heart, sensing a ventricular signal resulting from the delivered pacing pulse, detecting intrinsic activity within the sensed ventricular signal within the heart after delivering the pacing pulse, and extending a pacing interval between the delivered ventricular pacing pulse and a subsequently delivered ventricular pacing pulse based on the detection of intrinsic ventricular activity.

9. Regarding claims 33, 42, and 52, it is inherent that when the device of Park extends the pacing interval between pacing pulses, thus increasing the amount of time between pulses, the detection of intrinsic activity is aided. If there is a longer period of time during which there is no pacing pulse, the possibility of detecting intrinsic activity is enhanced.

10. Regarding claims 34, 43, and 53, Park discloses that modifying the pacing interval includes modulating an atrial to ventricular pacing delay (see paragraph 70, ln. 1-3).

11. Regarding claims 35 and 54, it is inherent that the subsequently delivered pacing pulse of Park may be delivered to a ventricle of the heart after the delivered pacing pulse (see paragraph 61, ln. 1-3).

12. Claims 32, 33, 35-42, 44-52, and 54-59 are rejected under 35 U.S.C. 102(e) as being anticipated by Van Dam. Regarding claims 32, 41, 44, and 51, Van Dam discloses ventricular pacing electrodes 28 and 29 at the distal end of ventricular pacing lead 18 which are capable of delivering a pacing pulse to a ventricle of the heart (see col. 4, ln. 19-21), detects intrinsic ventricular activity (see col. 11, ln. 21-22 and col. 3, ln. 58-60), and extends a pacing interval between pacing pulses based on the detection of intrinsic ventricular activity (see col. 1, ln. 7-11). Attention is directed to Figure 6 where at decision block 200 it is determined whether an intrinsic Vevent occurred or a paced Vevent. When it is determined that a paced Vevent occurred, the flow progresses to block 215 where intrinsic ventricular activity is detected and further to block 210 where the pacing interval is extended based on the detection of intrinsic ventricular activity (see Figures 6 and 8 and col. 3, ln. 58-60).

13. Regarding claims 33, 42, 52, it is inherent that when the device of Van Dam extends the pacing interval between pacing pulses, thus increasing the amount of time between pulses, the detection of intrinsic ventricular activity is aided. If there is a longer

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period of time during which there is no pacing pulse, the possibility of detecting intrinsic ventricular activity is enhanced.

14. Regarding claims 35 and 54, it is inherent that the subsequently delivered pacing pulse of Van Dam may be delivered to a ventricle of the heart after the delivered pacing pulse (see col. 4, ln. 19-21).

15. Regarding claims 36, 45, and 55, Van Dam discloses that in order to detect intrinsic ventricular activity within the heart, a past ventricular signal is compared with the current ventricular signal (see col. 1, ln. 56-59).

16. Regarding claims 37, 46, and 56, the Examiner takes the position that it is inherent that the device of Van Dam utilizes a past ventricular signal where the heart is fully captured by the past pacing pulse. It is necessary for a pacing pulse to fully capture the heart in order to evoke a cardiac response that generates the QT interval of Van Dam.

17. Regarding claims 38, 47, and 57, Van Dam discloses that a past ventricular signal may be a most recent ventricular signal resulting from a most recent pacing pulse (see col. 11, ln. 37-41).

18. Regarding claims 39, 48, and 58, Van Dam discloses comparing at least one morphological characteristic of a past ventricular signal to the same morphological characteristic of the current ventricular signal (see col. 3, ln. 9-11).

19. Regarding claims 40, 49, and 59, Van Dam discloses that a morphological characteristic that may be used is a T-wave amplitude or T wave slope (see col. 3, ln. 9-11).



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20. Regarding claim 50, Van Dam discloses memory 59 which may be used to store the past ventricular signal (see Figure 5).

The applied reference has a common assignee with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not the invention "by another," or by an appropriate showing under 37 CFR 1.131.

### ***Conclusion***

21. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Kramer et al. (U.S. Patent No. 6,285,907) and Callaghan et al. (U.S. Patent No. 6,269,268).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tammie Heller whose telephone number is 571-272-1986. The examiner can normally be reached on Monday through Friday from 7am until 3:30 pm.

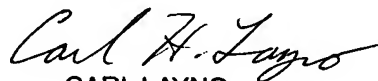
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Carl H. Layno can be reached on 571-272-4949. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



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